Amendments to the Claims

1. (Previously Presented): An atomic layer deposition method of depositing an oxide on a substrate comprising:

providing a substrate within a deposition chamber;

chemisorbing a first species to form a first species monolayer onto the substrate within the deposition chamber from a gaseous precursor;

contacting the chemisorbed first species with remote plasma oxygen derived at least in part from at least one of O_2 and O_3 and with remote plasma nitrogen effective to react with the first species to form a monolayer comprising an oxide of a component of the first species monolayer; and

successively repeating the chemisorbing and the contacting with remote plasma oxygen and with remote plasma nitrogen effective to form porous oxide on the substrate.

2. (Original): The method of claim 1 wherein the porous oxide comprises electrically insulative oxide.

3. (Original): The method of claim 2 wherein the porous oxide comprises SiO_2.

4. (Original): The method of claim 2 wherein the porous oxide comprises Al_2O_3.

5. (Original): The method of claim 1 wherein the porous oxide comprises electrically conductive oxide.

6. (Original): The method of claim 5 wherein the porous oxide comprises tin oxide.

7. (Original): The method of claim 5 wherein the porous oxide comprises indium oxide.

8. (Original): The method of claim 5 wherein the porous oxide comprises In_xSn_yO.

9. (Previously Presented): An atomic layer deposition method of depositing an oxide on a substrate comprising:

providing a substrate within a deposition chamber;

chemisorbing a first species to form a first species monolayer onto the substrate within the deposition chamber from a gaseous precursor;

contacting the chemisorbed first species with remote plasma oxygen derived at least in part from at least one of O_2 and O_3 and with remote plasma nitrogen effective to react with the first species to form a monolayer comprising an oxide of a component of the first species monolayer; and

successively repeating the chemisorbing and the contacting with remote plasma oxygen and with remote plasma nitrogen effective to form porous electrically conductive oxide comprising In_xSn_yO. on the substrate, the gaseous precursor comprising an indium-containing precursor and a tin-containing precursor which are fed to the deposition chamber simultaneously.

10. (Previously Presented): An atomic layer deposition method of depositing an oxide on a substrate comprising:

providing a substrate within a deposition chamber;

chemisorbing a first species to form a first species monolayer onto the substrate within the deposition chamber from a gaseous precursor;

contacting the chemisorbed first species with remote plasma oxygen derived at least in part from at least one of O_2 and O_3 and with remote plasma nitrogen effective to react with the first species to form a monolayer comprising an oxide of a component of the first species monolayer; and

successively repeating the chemisorbing and the contacting with remote plasma oxygen and with remote plasma nitrogen effective to form porous electrically conductive oxide comprising In_xSn_yO. on the substrate, the gaseous precursor comprising an indium-containing precursor and a tin-containing precursor which are fed to the deposition chamber at different times.

11. (Original): The method of claim 10 wherein the different times overlap one another.

12. (Original): The method of claim 10 wherein the different times are spaced from one another.

13. (Original): The method of claim 1 wherein the porous oxide comprises multiple different cations.

14. (Original): The method of claim 1 wherein the gaseous precursor comprises trimethyl aluminum, the component comprises aluminum, and the porous oxide comprises Al_2O_3.

15. (Original): The method of claim 1 wherein the gaseous precursor comprises at least one of TEOS and a silane, the component comprises silicon, and the porous oxide comprises SiO_2.

16. (Original): The method of claim 15 wherein the gaseous precursor comprises TEOS.

17. (Original): The method of claim 15 wherein the gaseous precursor comprises a silane.

18. (Original): The method of claim 1 wherein the gaseous precursor comprises trimethyl tin, the component comprises tin, and the porous oxide comprises tin oxide.

19. (Original): The method of claim 1 wherein the gaseous precursor comprises trimethyl indium, the component comprises indium, and the porous oxide comprises indium oxide.

20. (Original): The method of claim 1 wherein the gaseous precursor comprises trimethyl tin, the gaseous precursor comprises trimethyl indium, and the porous oxide comprises In_xSn_yO.

21. (Original): The method of claim 1 wherein the remote plasma nitrogen is derived at least in part from N_2.

22. (Original): The method of claim 21 wherein nitrogen of the remote plasma nitrogen is derived entirely from N_2.

23. (Original): The method of claim 1 wherein the remote plasma nitrogen is derived at least in part from N_2O.

24. (Original): The method of claim 23 wherein nitrogen of the remote plasma nitrogen is derived entirely from N_2O.

25. (Original): The method of claim 1 wherein the remote plasma nitrogen is derived at least in part from NO_x.

26. (Previously Presented): The method of claim 25 wherein nitrogen of the remote plasma nitrogen is derived entirely from NO_x.

27. (Original): The method of claim 1 wherein the remote plasma oxygen is derived at least in part from O_2.

28. (Original): The method of claim 1 wherein oxygen of the remote plasma oxygen is derived entirely from O_2.

29. (Original): The method of claim 1 wherein the remote plasma oxygen is derived at least in part from O_3.

30. (Original): The method of claim 1 wherein the remote plasma oxygen and the remote plasma nitrogen are fed as a mixture to the deposition chamber.

31. (Original): The method of claim 1 wherein the remote plasma oxygen and the remote plasma nitrogen are fed separately to the deposition chamber.

32. (Original): The method of claim 31 wherein the remote plasma oxygen and the remote plasma nitrogen are fed separately to the deposition chamber at different times.

33. (Original): The method of claim 32 wherein the different times are spaced from one another.

34. (Original): The method of claim 32 wherein the different times overlap one another.

35. (Previously Presented): An atomic layer deposition method of depositing an oxide on a substrate comprising:

providing a substrate within a deposition chamber;

chemisorbing a first species to form a first species monolayer onto the substrate within the deposition chamber from a gaseous precursor;

contacting the chemisorbed first species with remote plasma oxygen derived at least in part from at least one of O_2 and O_3 and with remote plasma nitrogen effective to react with the first species to form a monolayer comprising an oxide of a component of the first species monolayer, the remote plasma oxygen and the remote plasma nitrogen being fed separately to the deposition chamber simultaneously; and

successively repeating the chemisorbing and the contacting with remote plasma oxygen and with remote plasma nitrogen effective to form porous oxide on the substrate.

36. (Original): The method of claim 1 wherein the remote plasma oxygen and the remote plasma nitrogen are generated in the same remote plasma generating chamber, and fed as a mixture to the deposition chamber.

37. (Previously Presented): An atomic layer deposition method of depositing an oxide on a substrate comprising:

providing a substrate within a deposition chamber;

chemisorbing a first species to form a first species monolayer onto the substrate within the deposition chamber from a gaseous precursor;

contacting the chemisorbed first species with remote plasma oxygen derived at least in part from at least one of O_2 and O_3 and with remote plasma nitrogen effective to react with the first species to form a monolayer comprising an oxide of a component of the first species monolayer, the remote plasma oxygen and the remote plasma nitrogen ~~are~~ being generated in different remote plasma generating chambers; and

successively repeating the chemisorbing and the contacting with remote plasma oxygen and with remote plasma nitrogen effective to form porous oxide on the substrate.

38. (Original): The method of claim 37 wherein the remote plasma oxygen and the remote plasma nitrogen are fed as a mixture to the deposition chamber.

39. (Original): The method of claim 1 wherein the remote plasma oxygen and the remote plasma nitrogen are fed to the deposition chamber simultaneously.

40. (Original): The method of claim 39 wherein the remote plasma nitrogen is from 0.01% to 90% by volume of all remote plasma oxygen and remote plasma nitrogen fed to the deposition chamber.

41. (Original): The method of claim 40 wherein the remote plasma nitrogen is from 0.1% to 10% by volume of all remote plasma oxygen and remote plasma nitrogen fed to the deposition chamber.

42. (Original): The method of claim 41 wherein the remote plasma nitrogen is from 0.1% to 3% by volume of all remote plasma oxygen and remote plasma nitrogen fed to the deposition chamber.

43. (Original): The method of claim 41 wherein the remote plasma nitrogen is from 0.01% to 1% by volume of all remote plasma oxygen and remote plasma nitrogen fed to the deposition chamber.

44. (Previously Presented): An atomic layer deposition method of depositing an oxide on a substrate comprising:

providing a substrate within a deposition chamber;

chemisorbing a first species to form a first species monolayer onto the substrate within the deposition chamber from a gaseous precursor;

feeding a) at least one of O_2 and O_3, and b) nitrogen to a remote plasma generator and forming a mixture of remote plasma oxygen and remote plasma nitrogen therefrom, the mixture comprising the remote plasma nitrogen at from 0.1% to 10% by volume of all remote plasma oxygen and remote plasma nitrogen generated by the generator;

feeding the remote plasma mixture to the deposition chamber and to contact the chemisorbed first species effective to react with the first species to form a monolayer comprising an oxide of a component of the first species monolayer; and

successively repeating the chemisorbing and the contacting with remote plasma oxygen and with remote plasma nitrogen effective to form porous oxide on the substrate.

45. (Original): The method of claim 44 wherein the porous oxide comprises electrically insulative oxide.

46. (Original): The method of claim 45 wherein the porous oxide comprises SiO_2.

47. (Original): The method of claim 45 wherein the porous oxide comprises Al_2O_3.

48. (Original): The method of claim 44 wherein the porous oxide comprises electrically conductive oxide.

49. (Original): The method of claim 48 wherein the porous oxide comprises tin oxide.

50. (Original): The method of claim 48 wherein the porous oxide comprises indium oxide.

51. (Original): The method of claim 48 wherein the porous oxide comprises In_xSn_yO.

52. (Previously Presented): An atomic layer deposition method of depositing an oxide on a substrate comprising:

providing a substrate within a deposition chamber;

chemisorbing a first species to form a first species monolayer onto the substrate within the deposition chamber from a gaseous precursor;

feeding a) at least one of O_2 and O_3, and b) nitrogen to a remote plasma generator and forming a mixture of remote plasma oxygen and remote plasma nitrogen therefrom, the mixture comprising the remote plasma nitrogen at from 0.1% to 10% by volume of all remote plasma oxygen and remote plasma nitrogen generated by the generator;

feeding the remote plasma mixture to the deposition chamber and to contact the chemisorbed first species effective to react with the first species to form a monolayer comprising an oxide of a component of the first species monolayer; and

successively repeating the chemisorbing and the contacting with remote plasma oxygen and with remote plasma nitrogen effective to form porous oxide on the substrate, the gaseous precursor comprising an indium-containing precursor and a tin-containing precursor which are fed to the deposition chamber simultaneously.

53. (Previously Presented): An atomic layer deposition method of depositing an oxide on a substrate comprising:

providing a substrate within a deposition chamber;

chemisorbing a first species to form a first species monolayer onto the substrate within the deposition chamber from a gaseous precursor;

feeding a) at least one of O_2 and O_3, and b) nitrogen to a remote plasma generator and forming a mixture of remote plasma oxygen and remote plasma nitrogen therefrom, the mixture comprising the remote plasma nitrogen at from 0.1% to 10% by volume of all remote plasma oxygen and remote plasma nitrogen generated by the generator;

feeding the remote plasma mixture to the deposition chamber and to contact the chemisorbed first species effective to react with the first species to form a monolayer comprising an oxide of a component of the first species monolayer; and

successively repeating the chemisorbing and the contacting with remote plasma oxygen and with remote plasma nitrogen effective to form porous oxide on the substrate, the gaseous precursor comprising an indium-containing precursor and a tin-containing precursor which are fed to the deposition chamber at different times.

54. (Original): The method of claim 52 wherein the different times overlap one another.

55. (Original): The method of claim 52 wherein the different times are spaced from one another.

56. (Original): The method of claim 44 wherein the porous oxide comprises multiple different cations.

57. (Original): The method of claim 44 wherein the remote plasma mixture comprises the remote plasma nitrogen at from 0.1% to 3% by volume of all remote plasma oxygen and remote plasma nitrogen fed to the deposition chamber.

58. (Original): The method of claim 44 wherein the remote plasma mixture comprises the remote plasma nitrogen at from 0.01% to 1% by volume of all remote plasma oxygen and remote plasma nitrogen fed to the deposition chamber.

59. (Original): The method of claim 44 wherein the remote plasma nitrogen is derived at least in part from N_2.

60. (Original): The method of claim 59 wherein nitrogen of the remote plasma nitrogen is derived entirely from N_2.

61. (Original): The method of claim 44 wherein the remote plasma nitrogen is derived at least in part from N_2O.

62. (Original): The method of claim 61 wherein nitrogen of the remote plasma nitrogen is derived entirely from N_2O.

63. (Original): The method of claim 44 wherein the remote plasma nitrogen is derived at least in part from NO_x.

64. (Original): The method of claim 63 wherein nitrogen of the remote plasma nitrogen is derived entirely from NO_x.

65. (Original): The method of claim 44 wherein the (a) feeding comprises O_2.

66. (Original): The method of claim 65 wherein the (a) feeding consists essentially of O_2.

67. (Original): The method of claim 44 wherein the (a) feeding comprises O_3.

68. (Previously Presented): An atomic layer deposition method of depositing an oxide on a substrate comprising:

providing a substrate within a deposition chamber;

chemisorbing a first species to form a first species monolayer onto the substrate within the deposition chamber from a gaseous trimethyl aluminum comprising precursor;

feeding a) at least one of O_2 and O_3, and b) nitrogen to a remote plasma generator and forming a mixture of remote plasma oxygen and remote plasma nitrogen therefrom, the mixture comprising the remote plasma nitrogen at from 0.1% to 10% by volume of all remote plasma oxygen and remote plasma nitrogen generated by the generator;

feeding the remote plasma mixture to the deposition chamber and to contact the chemisorbed first species effective to react with the first species to form a monolayer comprising aluminum oxide; and

successively repeating the chemisorbing and the contacting with remote plasma oxygen and with remote plasma nitrogen effective to form porous aluminum oxide on the substrate.

69. (Original): The method of claim 68 wherein the (a) feeding comprises O_2.

70. (Original): The method of claim 69 wherein the (a) feeding consists essentially of O_2.

71. (Original): The method of claim 68 wherein the (a) feeding comprises O_3.

72. (Original): The method of claim 68 wherein the mixture comprises the remote plasma nitrogen at from 0.1% to 3% by volume of all remote plasma oxygen and remote plasma nitrogen fed to the deposition chamber.

73. (Original): The method of claim 68 wherein the mixture comprises the remote plasma nitrogen at from 0.01% to 1% by volume of all remote plasma oxygen and remote plasma nitrogen fed to the deposition chamber.

74. (Original): The method of claim 68 wherein the remote plasma nitrogen is derived at least in part from N_2.

75. (Original): The method of claim 74 wherein nitrogen of the remote plasma nitrogen is derived entirely from N_2.

76. (Original): The method of claim 68 wherein the remote plasma nitrogen is derived at least in part from N_2O.

77. (Original): The method of claim 76 wherein nitrogen of the remote plasma nitrogen is derived entirely from N_2O.

78. (Original): The method of claim 68 wherein the remote plasma nitrogen is derived at least in part from NO_x.

79. (Original): The method of claim 78 wherein nitrogen of the remote plasma nitrogen is derived entirely from NO_x.

Claims 80-82 (Canceled).

83. (New): The method of claim 1 wherein the contacting is effective to form the porous oxide to have substantially closed-cell pores.

84. (New): The method of claim 1 wherein the contacting is effective to form the porous oxide to be of about 50% porosity.

85. (New): The method of claim 44 wherein the contacting is effective to form the porous oxide to have substantially closed-cell pores.

86. (New): The method of claim 44 wherein the contacting is effective to form the porous oxide to be of about 50% porosity.

87. (New): The method of claim 68 wherein the contacting is effective to form the porous oxide to have substantially closed-cell pores.

88. (New): The method of claim 68 wherein the contacting is effective to form the porous oxide to be of about 50% porosity.